PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference H2195 PCT	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/EP 03/13100	International filing date *(day/month/year)* 21.11.2003	Priority date *(day/month/year)* 21.11.2003
International Patent Classification (IPC) or both national classification and IPC F41A17/06		
Applicant ARMATIX GMBH ET AL.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 6 sheets, including this cover sheet.

   ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of 4 sheets.

3. This report contains indications relating to the following items:

   - I ☒ Basis of the opinion
   - II ☐ Priority
   - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV ☐ Lack of unity of invention
   - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - VI ☐ Certain documents cited
   - VII ☐ Certain defects in the international application
   - VIII ☐ Certain observations on the international application

Date of submission of the demand	Date of completion of this report
31.05.2005	07.02.2006
Name and mailing address of the international preliminary examining authority: European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer Menier, R Telephone No. +31 70 340-4405

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/EP 03/13100

I. Basis of the report

1. With regard to the **elements** of the international application *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17))*:

Description, Pages

1-10 as originally filed

Claims, Numbers

1-20 received on 21.12.2005 with letter of 21.12.2005

Drawings, Sheets

1/2, 2/2 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).

☐ the language of publication of the international application (under Rule 48.3(b)).

☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

☐ the description, pages:

☐ the claims, Nos.:

☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

   (Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-20
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-20
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-20
	No:	Claims	

2. Citations and explanations

   see separate sheet

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1 The amended claims and the arguments sent by the applicant have been studied carefully. Nevertheless it seems that the present application still does not meet the requirements of the PCT.

The present application does not meet the requirements of Article 6 PCT, because the subject-matter of claims 16-17 is not clear.

2 Reference is made to the following documents:
D1: US2001032405 A
D2: US5192818 A
D3: US6301815 B

3 The present application does not meet the requirements of Article 6 PCT, because the subject-matter of claims 16-17 is not clear.

According to the requirements of Rule 10.2 PCT, the terminology shall be consistent throughout the application. This requirement is not met in view of the use of the expression "Safety means according to..." in claims 19-20 whereas "Safety device according to" is used in the other claims.

4 The document D1 is regarded as being the closest prior art to the subject-matter of independent claim 1, and shows (the references in parentheses applying to this document) a safety device for a hand-held weapon (10) (abstract) with the following features:
(a) a transponder (86) for authenticating at least one authorized weapon user carrying or wearing the transponder (86) or for authenticating an allowed area for using the weapon (10) (paragraph 46),
(b) wherein the transponder (86) is formed as a relatively small device to be constantly carried or worn by the user (par.46, fig.6A) and is adapted to emit a wireless preferably cryptified signal (paragraph 46);
(c) a safety means (38+68+72+62) for a grip of the weapon (10) which is adapted to

be necessarily activated by a hand of the user when the hand is holding the grip of the weapon (10) and which upon activation emits a wireless request signal (paragraphs 43,46),
(d) wherein the transponder (86) is adapted to emit the authenticating signal upon receipt of the request signal from the safety means (38+68+72+62) (paragraph 46),
(e) wherein the safety means (38+68+72+62) is further adapted to receive and process the authenticating signal from the transponder (86) (paragraph 46); and
(f) wherein the safety means (38+68+72+62) is adapted to only permit firing of the weapon (10) by the user upon receipt of an authenticating signal from the transponder (86) authenticating an authorized user (paragraph 46).

4.1 The subject-matter of independent claim 1 differs from this known safety device in that:
- the transponder further comprises a switch for activating the transponder for a given period of time for emitting the authenticating signal and comprises a biometric sensor, preferably a fingerprint sensor, for identifying an authorized user before activating the transponder (difference 1),
-the safety device is adapted to permit firing of the weapon for a given number of shots or for a given period of time once it has received an authenticating signal from an authorized user (difference 2).

4.2 The subject-matter of independent claim 1 is therefore new (Article 33(2) PCT).

4.3 The problem to be solved by the present invention may be regarded as improving the safety of such a device.

4.4 The solution to this problem proposed in independent claim 1 of the present application is considered as involving an inventive step (Article 33(3) PCT) for the following reasons:

Regarding the first difference, D1 describes a switch for activating the transceiver for a given period of time (par.46). This solution is a kinematic inversion of the missing feature of the present invention. D1 further describes a palm sensor (par.39) which is not suitable for identifying an authorized user.
Regarding the second difference, D2 describes an apparatus which limits the amount

of time that a hand weapon can be discharged (abstract). Therefore this apparatus also limits the number of shots.

The integration of all the missing features mentioned in point 4.1 of the present communication in the safety device described in D1 would require too many changes in order to be regarded as a normal option by the skilled person. Although part of these missing features are suggested by D1 or D2, their combination definitively adds enhanced safety to the weapon insofar as the user has to be first biometrically recognized before the transponder that he wears is switched on. This second step, dependent on the first one, leads to the activation of the transponder which allows use of the weapon for limited time or number of shots.

5 Claims 2-19 are dependent on independent claim 1 and as such also meet the requirements of the PCT with respect to novelty and inventive step.

6 Independent claim 20, whose features correspond to the features of independent claim 1, meets also the requirements of the PCT with respect to novelty and inventive step (see point 4 of the present communication).

Claims (Fair copy)

1. Safety device for a hand-held weapon with the following features:
   (a) a transponder for authenticating at least one authorized weapon user carrying or wearing the transponder or for authenticating an allowed area for using the weapon,
   (b) wherein the transponder is formed as a relatively small device to be constantly carried or worn by the user and is adapted to emit a wireless preferably cryptified authenticating signal;
   (c) wherein the transponder further comprises a switch for activating the transponder for a given period of time for emitting the authenticating signal and comprises a biometric sensor, preferably a fingerprint sensor, for identifying an authorized user before activating the transponder,
   (d) a safety means for a grip of the weapon which is adapted to be necessarily activated by a hand of the user when the hand is holding the grip of the weapon and which upon activation emits a wireless request signal,
   (e) wherein the transponder is adapted to emit the authenticating signal upon receipt of the request signal from the safety means,
   (f) wherein the safety means is further adapted to receive and process the authenticating signal from the transponder; and
   (g) wherein the safety means is adapted to only permit firing of the weapon by the user upon receipt of an authenticating signal from the transponder authenticating an authorized user, wherein the safety device is adapted to permit firing of the weapon for a given number of shots or for a given period of time once it has received an authenticating signal from an authorized user.

2. Safety device according to claim 1, wherein the safety means and the transponder communicate with each other preferably wireless, more preferably by a bidirectional wireless signal transmission, preferably based on a Challenge response algorithm, even more preferably with a magnetic frequency of approximately 25kHz or via blue tooth interfaces.

3. Safety device according to claim 1 or 2, wherein the safety means comprises a switch which is located on the weapon so that it can be actuated by a hand of the user when the hand is holding the grip of the weapon.

4. Safety device according to claim 3, wherein the switch is situated to be essentially actuated by the wearer's eminences of hand.

5. Safety device according to claims 1 or 2, wherein the safety means comprises a sensor, preferably an optical sensor and/or a pressure sensitive sensor and/or a capacitive sensor and/or a resistance sensor, which is located on the weapon so that it can be actuated by a hand of the user when the hand is holding the grip of the weapon.

6. Safety device according to claims 3 or 4, wherein the safety means is actuated when the switch is actuated and deactivated when the switch is deactivated.

7. Safety device according to claim 5, wherein the safety means is actuated when the sensor is actuated and deactivated when the sensor is deactivated.

8. Safety device according to anyone of the preceding claims, wherein the transponder comprises keys for entering a personal code for identifying an authorized user before activating the transponder a given period of time for emitting the authentication signal.

9. Safety device according to anyone of the preceding claims, wherein the transponder can be configured to provide an authenticating signal within a range of approximately 20 cm to 1,5 m and preferably approximately 80 cm.

10. Safety device according to anyone of the preceding claims, wherein different transponders can be used for different users of the safety device.

11. Safety device according to anyone of the preceding claims, wherein the period of time preferably can be varied for different transponders of different users of the safety device.

12. Safety device according to anyone of claims 3 to 11, wherein the device is regularly interrogated or inquired in case the switch is actuated by the wearer's eminences of hand.

13. Safety device according to anyone of claims 5 and 7 to 11, wherein the device is regularly interrogated or inquired in case the sensor is actuated by a hand of the user when the hand is holding the grip of the weapon.

14. Safety device according to anyone of the preceding claims, wherein the transponder is adapted to also communicate with a compartment for weapons, such as a locker, in order to give an authorized person access to the compartment.

15. Safety device according to anyone of the preceding claims, wherein the transponder and/or the safety means is programmable in order to authorize a user or a group of users.

16. Safety means according to claim 15, wherein the safety means is programmable preferably wireless, more preferably by a bidirectional wireless signal transmission, preferably based on a Challenge response algorithm, even more preferably with a magnetic frequency of approximately 25kHz or via blue tooth interfaces.

17. Safety means according to any of the preceding claims, wherein the request signal and/or the authenticating signal are communicated preferably wireless, more preferably by a bidirectional wireless signal transmission, preferably based on a Challenge response algorithm, even more preferably with a magnetic frequency of approximately 25kHz or via blue tooth interfaces.

18. Safety device according to anyone of the preceding claims, comprising a safety disconnector which is adapted to deactivate the transponder and/or the safety means in case of an emergency, so that a user cannot fire the weapon.

19. Safety device according to anyone of the preceding claims, wherein activities of the transponder and/or the safety means is logged and readable by a computer.

20. Method for securing a hand-held weapon, particularly for operating a safety device according to anyone of the preceding claims, with the following steps:

(a) providing a transponder which is adapted to be constantly carried or worn by a user and which is adapted to emit a wireless preferably cryptified authenticating signal which authenticates at least one authorized weapon user or authenticates an allowed area for using the weapon, wherein the transponder is further adapted to be activated for a given period of time for emitting the authenticating signal and wherein the transponder is adapted to identify an authorized user before being activated,

(b) activating a safety means for a grip of the weapon by a hand of the user when the hand is holding the grip of the weapon and emitting upon activation a wireless request signal by the safety means,

(c) emitting the authenticating signal by the transponder upon receipt of the request signal from the safety means,

(d) wherein the safety means is further adapted to receive and process the authenticating signal from the transponder; and

(e) wherein the safety means is adapted to only permit firing of the weapon by the user upon receipt of an authenticating signal from the transponder authenticating an authorized user, wherein the safety device is adapted to permit firing of the weapon for a given number of shots or for a given period of time once it has received the authenticating signal from the authorized user.